

Go2476

PATENT
P57016**IN THE CLAIMS**

Pursuant to 37 CFR §1.121(c), the claim listing, including the text of the claims, will serve to replace all prior versions of the claims, in the application.

Please amend claims 1, 14, and 27.

1. (Currently Amended) A secondary battery, comprising:

an electrode unit having a first electrode plate, a second electrode plate, a separator interposed therebetween, and first and second electrode tabs respectively extending from the first and second electrode plates;

a can adapted to accommodate the electrode unit and an electrolytic solution; and

a cap plate adapted to seal the can ~~and having, said cap plate being perforated by~~
an electrolytic solution inlet[[,]] ~~extending from a smaller opening a first area of a first~~
~~opening of the electrolytic solution inlet~~ on a first major surface of the cap plate facing an
exterior of the secondary battery being different from and through the cap plate to a
~~second area of a second larger~~ opening of the electrolytic solution inlet on a second major
surface of the cap plate facing the electrode unit, the first surface of the cap plate and the
~~second surface of the cap plate on opposite sides of the cap plate to and being spaced~~
~~apart from the electrode unit, with the first surface facing to an exterior of the secondary~~
~~battery and the second surface facing to the electrode unit, and with the first area being~~
~~smaller than the second area.~~

2. (Canceled)

3. (Canceled)

4. (Previously Presented) The secondary battery of claim 1, further comprising at least one channel adapted to facilitate injection of an electrolytic solution in the

Go2476

PATENT
P57016

neighborhood of the electrolytic solution inlet.

5. (Previously Presented) The secondary battery of claim 4, wherein one end of the channel is integrated with and connected to the electrolytic solution inlet.

6. (Previously Presented) The secondary battery of claim 5, wherein the channel is linearly shaped and arranged radially in the neighborhood of the electrolytic solution inlet.

7. (Previously Presented) The secondary battery of claim 4, wherein the channel has a depth in a range of 0.1mm to 0.5 mm.

8. (Original) The secondary battery of claim 1, wherein the electrolytic solution inlet has a sloping cross-section.

9. (Original) The secondary battery of claim 1, wherein the electrolytic solution inlet has a stepped portion recessed to a predetermined depth in the neighborhood of the electrolytic solution inlet.

10. (Previously Presented) The secondary battery of claim 9, wherein the stepped portion has a depth in a range of 0.1mm to 0.5 mm.

11. (Previously Presented) The secondary battery of claim 1, wherein the first electrode tab is electrically connected to a terminal pin which is physically connected to the cap plate and electrically insulated from the cap plate, and the second electrode tab is welded to the cap plate at a position between the terminal pin and the electrolytic solution inlet.

Go2476

PATENT
P57016

12. (Previously Presented) The secondary battery of claim 1, with the first electrode tab being electrically connected to a terminal pin which is physically connected to the cap plate and electrically insulated from the cap plate, the second electrode tab being welded to the cap plate at a first position and the terminal pin being disposed between the electrolytic solution inlet and the first position.

13. (Previously Presented) The secondary battery of claim 12, further comprising a safety vent arranged at a second position, the second electrode tab being disposed between the terminal pin and the second position, and the safety vent being adapted to rupture when the internal pressure of the sealed can increases to a level greater than a predetermined allowed level.

14. (Currently Amended) A secondary battery, comprising:
an electrode unit having a first electrode plate, a second electrode plate, a separator interposed therebetween, and first and second electrode tabs respectively extending from the first and second electrode plates;

a can adapted to encase the electrode unit and an electrolytic solution;

a cap plate adapted to seal the can;

a terminal pin electrically connected to the first electrode tab and physically connected to and electrically insulated from the cap plate;

an insulating plate provided on a second major surface of the cap plate and extending in a direction along which the cap plate extends and arranged to insulate the terminal pin from the cap plate; and

the second electrode tab being welded to the cap plate at a position, the terminal pin being disposed between an electrolytic solution inlet and the second electrode tab, a first area of said cap plate being perforated by the electrolytic solution inlet having a

Go2476

PATENT
P57016

15 ~~[[first]] smaller opening of the electrolytic solution inlet located on a first major surface~~
16 ~~of the cap plate facing an exterior of the secondary battery and through being different~~
17 ~~from a second area of a second larger opening of an injection hole of the electrolytic~~
18 ~~solution inlet on the second major surface of the cap plate, the first surface of the cap~~
19 ~~plate and the second surface of the cap plate opposite to and spaced apart from the~~
20 ~~electrode unit, the first surface facing to an exterior of the secondary battery and the~~
21 ~~second surface facing to the electrode unit, and with the first area being smaller than the~~
22 ~~second area.~~

1 15. (Previously Presented) The secondary battery of claim 14, with the electrolytic
2 solution inlet being arranged to overlap the insulating plate, and the injection hole
3 disposed corresponding to the electrolytic solution inlet arranged in the insulating plate.

1 16. (Canceled)

1 17. (Canceled)

1 18. (Canceled)

1 19. (Previously Presented) The secondary battery of claim 15, further comprising
2 at least one channel adapted to facilitate injection of an electrolytic solution in the
3 neighborhood of the injection hole.

1 20. (Original) The secondary battery of claim 19, wherein one end of the channel
2 is connected to the injection hole.

1 21. (Previously Presented) The secondary battery of claim 20, wherein the

Go2476

PATENT
P57016

2 channel is linearly shaped and arranged radially in the neighborhood of the injection hole.

1 22. (Previously Presented) The secondary battery of claim 19, wherein the
2 channel has a depth in a range of 0.1mm to 0.5 mm.

1 23. (Original) The secondary battery of claim 15, wherein the injection hole has a
2 sloping cross-section.

1 24. (Original) The secondary battery of claim 15, wherein a stepped portion
2 recessed to a predetermined depth is arranged in the neighborhood of the injection hole.

1 25. (Previously Presented) The secondary battery of claim 24, wherein the
2 stepped portion has a depth in a range of 0.1 mm to 0.5 mm.

1 26. (Previously Presented) The secondary battery of claim 14, further comprising
2 a safety vent arranged at a position, the second electrode tab being disposed between the
3 terminal pin and the position, and the safety vent adapted to rupture when the internal
4 pressure of the sealed can increases so as to be greater than a predetermined allowed
5 level.

1 27. (Currently Amended) A secondary battery, comprising:
2 an electrode unit having a first electrode plate, a second electrode plate, a
3 separator interposed therebetween, and first and second electrode tabs respectively
4 extending from the first and second electrode plates;
5 a can adapted to encase the electrode unit and an electrolytic solution;
6 a cap plate adapted to seal the can and, said cap plate having an electrolytic
7 solution inlet;

Go2476

PATENT
P57016

8 a terminal pin electrically connected to the first electrode tab and physically
9 connected to and electrically insulated from the cap plate;

10 an insulating plate arranged on a second surface of the cap plate, said insulating
11 plate extending in one direction of the cap plate and insulating the terminal pin from the
12 cap plate; and

13 the electrolytic solution inlet being arranged to overlap the insulating plate, and an
14 injection hole disposed in correspondence with the electrolytic solution inlet, the
15 electrolytic solution inlet being positioned in the insulating plate, ~~a first area of said~~
16 ~~insulating plate being perforated by the electrolytic solution inlet extending between a~~
17 ~~[[first]] smaller opening of the electrolytic solution inlet located on a first major surface~~
18 ~~of the insulating plate facing the electrode unit of the secondary battery and through to a~~
19 ~~larger being different from a second area of a second opening of the injection hole on a~~
20 ~~second surface of the cap plate, the first surface of the insulating plate and the second~~
21 ~~surface of the cap plate opposite to and spaced apart from the electrode unit, the second~~
22 ~~surface of the cap plate and facing [[to]] an exterior of the secondary battery and the first~~
23 ~~surface of the insulating plate facing to the electrode unit, and the first area being bigger~~
24 ~~than the second area.~~

1 28. (Canceled)

1 29. (Canceled)

1 30. (Canceled)

1 31. (Previously Presented) The secondary battery of claim 27, further comprising
2 at least one channel adapted to facilitate injection of an electrolytic solution in the
3 neighborhood of the injection hole.

Go2476

PATENT
P57016

1 32. (Original) The secondary battery of claim 31, wherein one end of the channel
2 is connected to the injection hole.

1 33. (Previously Presented) The secondary battery of claim 32, wherein the
2 channel is linearly shaped and arranged radially in the neighborhood of the injection.

1 34. (Previously Presented) The secondary battery of claim 31, wherein the
2 channel has a depth in a range of 0.1mm to 0.5 mm.

1 35. (Original) The secondary battery of claim 27, wherein the injection hole has a
2 sloping cross-section.

1 36. (Original) The secondary battery of claim 27, wherein a stepped portion
2 recessed to a predetermined depth is arranged in the neighborhood of the injection hole.

1 37. (Previously Presented) The secondary battery of claim 36, wherein the
2 stepped portion has a depth in a range of 0.1mm to 0.5 mm.